

AMENDMENTS TO THE SPECIFICATION

Please amend the Specification pursuant to 37 C.F.R. § 1.121 as follows:

On page 1, at line 1, amend the title as follows:

-- ELECTRO-SURGICAL ELECTRODE FOR RADIOFREQUENCY TISSUE
ABLATION OPERATION --

On page 1, at lines 4-7, please make the following amendments:

-- The present invention relates to an electrode for an electric operation device, and more particularly to[[,]] an electrode for an electric operation device for ablation and necrosis of a living tissue using RF electric energy. --

On page 1, at lines 9-18, please make the following amendments:

-- In general, a technique of ablating (or coagulating) a wanted living tissue with RF energy by inserting a long hollow tube-shaped electrode into the living tissue has been publicly known. When current is applied to the living tissue, the living tissue is heated, and thus the living tissue and blood vessels are ablated by a complicated biochemical process. This process depends on ablation of a cell by thermal transformation of cell proteins over about 60°C. Here, the cell implies the tissue, blood vessel and blood. However, the living tissue adjacent to the electrode and blood are excessively ablated and carbonized. The carbonized living tissue adjacent to the electrode is ~~operated~~ operates as an insulator, ~~namely and thus~~ an obstacle to enlargement of an ablation zone of the living tissue. --

On page 6, at lines 7-11, please make the following amendments:

-- FIG. 5 is a cross-sectional view illustrating the electrode for the electric operation device of FIG. 4; [[and]]

FIGS. 6A and 6B are graphs showing RF power and current applied to the conventional electrode and the electrode of the invention, and impedance values of thermocouples installed therein, respectively; and

FIG. 7 is a cross-sectional view illustrating another embodiment of the present invention. --

From page 6 line 21 to page 7 line 11 please make the following amendments:

-- The electric operation device can be used in various application fields. For convenience sake, it is exemplified that example the electric operation device is applied to the operation of a patient suffering from [[a]] liver cancer.

A doctor inserts the electrode for the electric operation device as shown in Figs. 1A and 1B into the body through the skin, moves the electrode for the electric operation device to [[a]] living tissue (for example, a predetermined area of the liver) for ablation and necrosis, supplies RF current from an external power source, and performs ablation and necrosis of the living tissue by the RF current in the tip 10 of the electrode for the electric operation device. Because an insulation coating 24 is formed on a large portion of the hollow electrode 20 by using an insulation material such as Teflon TEFLON™ (chemical name polytetrafluoroethylene), ablation and necrosis are performed on the part of the hollow electrode 20 where the insulation coating 24 has not been formed and the periphery of the tip 10. As a result, ablation and necrosis are performed on the

living tissue in a spherical shape. In this case, the living tissue contacting the hollow electrode 20 may be carbonized and operated as an insulator. It is thus very important to prevent carbonization of the living tissue to enlarge the ablation and necrosis zone. --

On page 7, at lines 17-24, please make the following amendments:

-- The refrigerants supplied into the hollow electrode 20 through a refrigerant tube 30 are infused into the hollow electrode 20 under a very high pressure (pressurized under approximately 700 to 1060KPa), for cooling the inside surface of the hollow electrode 20 and the tip 10, and discharged. Figs. 2 and 3 illustrate the structure of the hollow electrode 20 and the refrigerant tube 30. ~~[[An]]~~ A spearhead which is the tip 10 is incorporated with the hollow electrode 20. Here, the tip 10 is formed by using a conductive spearhead, and incorporated with the hollow electrode 20 by welding. --

On page 10, at lines 15-22, please make the following amendments:

-- ~~Although not illustrated,~~ A ~~[[a]]~~ porous metal sintered body layer 51 comprised of a metal harmless to the human body can be formed on the portion of the hollow electrode 20 including the first hole 22 as the flow control means. In this case, even if a special third hole 52 is not formed on the porous metal sintered body layer, the porous metal sintered body layer is operated as a discharge resistance on the discharge passage. Therefore, the discharge flow can be efficiently controlled by adjusting the size and number of the first hole 22 and porosity of the porous metal sintered body layer. --